HP StorageWorks Secure Manager XP User's Guide

XP48
XP256
XP512

fourth edition (May 2004)

part number: B9351-96003

This guide explains how to use HP StorageWorks Secure Manager XP

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Contents

About this guide

This manual provides information about installing, configuring and using HP StorageWorks Secure Manager XP. Secure Manager allows you to restrict a LUN's availability to a specified host or hosts, using the host's worldwide name (WWN).

Intended audience

This guide is intended for use by system administrators who are familiar with:

- data processing concepts
- direct-access storage device subsystems and their basic functions
- disk arrays and RAID technology
- operating system commands and utilities

Disk arrays

Unless otherwise noted, the term *disk array* refers to any of these disk arrays:

HP Surestore Disk Array XP256
HP Surestore Disk Array XP512
HP Surestore Disk Array XP48

Related documentation

HP provides the following related documentation:

- *HP StorageWorks Disk Array XP48: User's Guide*
- *HP StorageWorks Disk Array XP256: User's Guide*
- *HP StorageWorks Disk Array XP512: User's Guide*
- *HP StorageWorks Remote Control XP: User's Guide.*
- *HP StorageWorks LUN Configuration Manager XP: User's Guide.*

For information about operating system commands and third-party products, refer to the manufacturer's documentation.

Conventions

This guide uses the following text conventions.

Figure 1	Blue text represents a cross-reference. For the online version of this guide, the reference is linked to the target.
www.hp.com	Underlined, blue text represents a website on the Internet. For the online version of this guide, the reference is linked to the target.
literal	Bold text represents literal values that you type exactly as shown, as well as key and field names, menu items, buttons, file names, application names, and dialog box titles.
variable	Italics indicates that you must supply a value. Italics is also used for manual titles.
`input/output`	Monospace font denotes user input and system responses, such as output and messages.
Example	Denotes an example of input or output. The display shown in this guide may not match your configuration exactly.
[ ]	Indicates an optional parameter.
{ }	Indicates that you must specify at least one of the listed options.
|	Separates alternatives in a list of options.

Getting help

If you still have a question after reading this guide, contact your HP authorized service provider or access our website:

www.hp.com

HP technical support

In North America, call technical support at 1-800-652-6672, available 24 hours a day, 7 days a week.

Outside North America, call technical support at the nearest location. Telephone numbers for worldwide technical support are listed on the HP website under support:

thenew.hp.com/country/us/eng/support.html

Be sure to have the following information available before calling:

- technical support registration number (if applicable)
- product serial numbers
- product model names and numbers
- applicable error messages
- operating system type and revision level
- detailed, specific questions

For continuous quality improvement, calls may be recorded or monitored.

HP storage website

The HP website has the latest information on this product, as well as the latest drivers. Select the appropriate product or solution from this website:

thenew.hp.com/country/us/eng/prodserv/storage.html

HP authorized reseller

For the name of your nearest HP authorized reseller, you can obtain information by telephone:

United States   1-800-345-1518

Canada   1-800-263-5868

elsewhere   See the HP website for locations and telephone numbers:

                  www.hp.com

Revision history

August 2000	First release.
March 2001	Updated screens. Added support for XP48.
May 2004	General update to format and contents. Only minor technical changes were made.

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1

Introduction

Secure Manager allows you to restrict a LUN's availability to a specified host or hosts, using the host's worldwide name (WWN). Other hosts cannot access the secured LUN and its data.

Secure Manager can be turned on or off at the port level. If you do not want to use Secure Manager on a particular port you can disable the feature so that the LUNs are not restricted to a particular host or group of hosts.

You can assign a WWN to as many ports as you want, and you can assign more than one WWN to each port. You can also change the WWN access for any port without disrupting the settings of that port.

Because many WWNs can access each port and the same WWNs may go to other ports in the same disk array, Secure Manager allows you to create LUN groups and WWN groups so you can more easily manage WWNs and LUNs. A LUN group allows you to assign multiple LUNs to a single group name. A WWN group allows you to assign multiple WWNs to a single group name. A WWN group gives every host in the group access specified

LUNs or LUN groups. The table below shows the maximum capacities for the XP256 and XP512.

Capacity	XP256	XP512
Maximum WWNs in a WWN group	31	255
Maximum LUNs in a LUN group	120	256
Maximum WWNs per port	31	255
Maximum LUN groups per port	16	128
Maximum WWN groups per port	15	127

Caution *Secure Manager also allows you to set the security parameters while you are online, but be very careful if you choose to do so. If any of the Secure Manager parameters are incorrect, the operation could be disruptive to host I/O activity. Always verify the Secure Manager parameters before entering them.*

HP StorageWorks Secure Manager XP is a product option that runs under HP StorageWorks Remote Control XP. When Secure Manager is installed, it is accessible to administrators and users with access privileges for that option.

For more information, see the user documentation for Remote Control.

System requirements

See your HP account representative for specific requirements.

The system requirements for the Secure Manager XP software are:

- HP Surestore or HP StorageWorks disk array
- remote console PC with Windows 95, Windows 98, Windows NT, Windows 2000, or Windows XP
- HP StorageWorks Remote Control XP (RC) installed on the remote console PC
- HP StorageWorks LUN Configuration Manager XP installed on the remote console PC
- Secure Manager license key

Terms and concepts

You should be familiar with these terms and concepts:

- controller

  The disk array has one controller that controls all data access and storage operations.

- CU (control unit)

  When organizing the storage space attached to the controller, you can associate logical devices (LDEVs) with CUs by grouping similarly configured LDEVs into unique CUs. The CUs are numbered sequentially.

- LDEV

  An LDEV (logical device) is created when a RAID group is divided up according to a host emulation mode, such as OPEN-K or OPEN-E. The number of resulting LDEVs depends upon the emulation mode.

- volume

  Synonymous with LDEV.

- LUN

  A mapping between the LUN, port ID, and LDEV ID. A LUN can consist of one LDEV, multiple LDEVs (LUSE), or portions of LDEVs (VSC).

- LUN group

  Secure Manager allows you to assemble one or more LUNs into a group. Access to all LUNs within a group can be managed using the LUN group name.

- worldwide name (WWN)

  The WWN is a 64-bit physical address that uses the IEEE 48-bit format with a 12-bit extension and a 4-bit prefix. The WWN is represents a host bus adapter on a host. It is hard-coded to each port and is a unique name.

- WWN group

  You can assign multiple WWNs to a WWN group. Access to LUNs or LUN groups can be managed for all WWNs in the WWN group using a WWN group's name.

- nickname

  You can create a nickname for a WWN that can be used in Secure Manager settings. If a host port is changed, the new WWN can be assigned the original nickname. The new port that is assigned the original nickname inherits the security settings of the original port.

Reference documents

For additional information about Remote Control XP and option installation instructions, see the

HP StorageWorks Remote Control XP: User's Guide.

For additional information about LUN Configuration Manager XP, see the

HP StorageWorks LUN Configuration Manager XP: User's Guide.

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Installation

The installation procedure for Secure Manager is different for the XP256 and the XP512/XP48. Refer to the section in this chapter that matches your system.

Installing Secure Manager

Before starting the installation

Before you start the software installation, make sure you have installed the following:

- HP StorageWorks Remote Control XP (RC)

  You must have administrator privileges (view and modify access) for all Remote Control functions, including administrator-only functions and restricted functions.

- (*Recommended*) LUN Configuration Manager XP

- Secure Manager firmware option

  Your HP service representative must install the Secure Manager firmware option on the disk array before you install the license keys.

Installing the option software key (XP256)

Be sure you have the license key disk for Secure Manager.
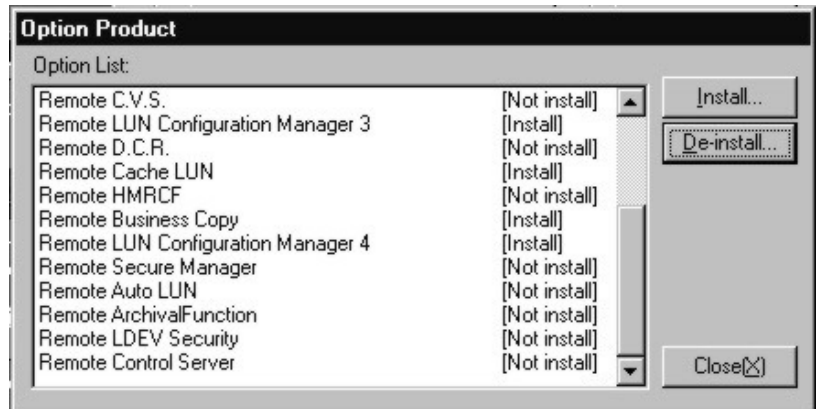
To install Secure Manager XP for an XP256:

1. Log in to Remote Control as an administrator.

   The RC main window opens.

2. Select Option.

   The Option Product window opens, showing the current installation status of the optional software.

```
Option Product
Option List:
Remote C.V.S.                            [Not install]   ▲      Install...
Remote LUN Configuration Manager 3       [Install]
Remote D.C.R.                            [Not install]          De-install...
Remote Cache LUN                         [Install]
Remote HMRCF                             [Not install]
Remote Business Copy                     [Install]
Remote LUN Configuration Manager 4       [Install]
Remote Secure Manager                    [Not install]
Remote Auto LUN                          [Not install]
Remote ArchivalFunction                  [Not install]
Remote LDEV Security                     [Not install]
Remote Control Server                    [Not install]   ▼      Close[X]
```

3. Select the Remote Secure Manager option.

4. Select the Install button.

5. Select the Close button.

   You are prompted to insert the license key diskette.

6. Insert the license key diskette in the diskette drive.

7. Select OK.

   If your key disk is not accepted, verify that the diskette is for Secure Manager. If the disk is correct, but is not accepted, contact your HP service representative.

   If your key disk is accepted, Secure Manager is now installed.

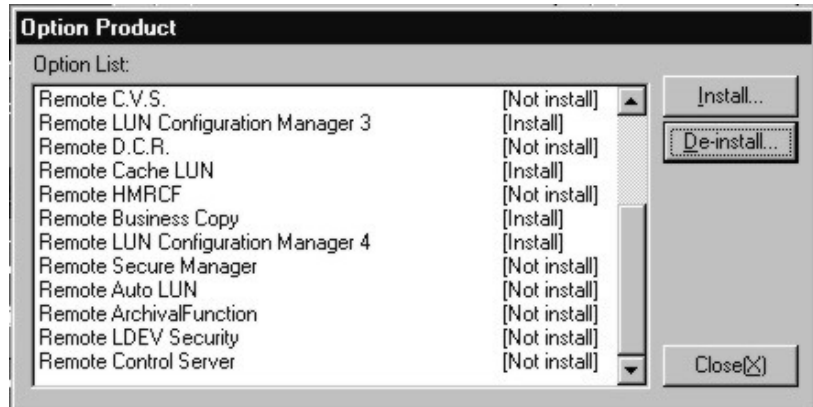## Installing the option software key (XP512/XP48)

Before you begin, be sure you have the license key code for Secure Manager.

To install Secure Manager for an XP512/XP48:

1. Log in to Remote Control as an administrator.

   The RC main window opens.

2. Select Option.

   The Option Product window opens, showing the current installation status of the optional software.


```
Option Product
Option List:
Remote C.V.S.                              [Not install]        Install...
Remote LUN Configuration Manager 3         [Install]
Remote D.C.R.                              [Not install]        De-install...
Remote Cache LUN                           [Install]
Remote HMRCF                               [Not install]
Remote Business Copy                       [Install]
Remote LUN Configuration Manager 4         [Install]
Remote Secure Manager                      [Not install]
Remote Auto LUN                            [Not install]
Remote ArchivalFunction                    [Not install]
Remote LDEV Security                       [Not install]
Remote Control Server                      [Not install]        Close(X)
```

3. Select the Remote Secure Manager option.

4. Select the Install button.

   The Input Key Code window opens.


```
Input Key Code                               ×
Key Code
                                            OK
                                            Cancel
```
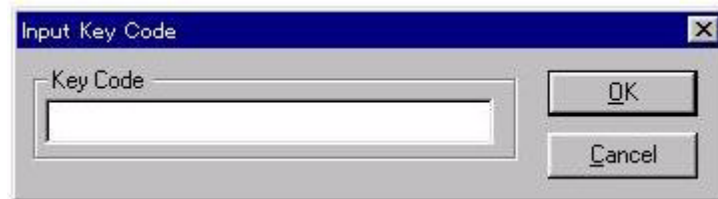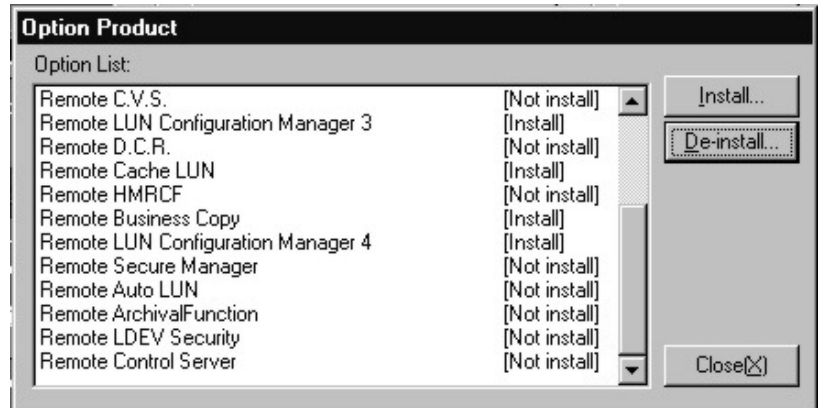
5. Enter the license key in the Key Code text box.

6. Select OK.

   If the key code is accepted, the Program Product Confirmation window opens, showing the product name, model name, key kind, and effective term.

   If the key code is not accepted, verify that the key code is for Secure Manager and that you have entered it correctly. If you entered the key code correctly, there may be a problem. Contact your HP service representative.

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7. Verify the contents of the Program Product Confirmation window and select OK.

   When the Secure Manager option installation is complete, the Option Product window opens. The status of the Secure Manager option has changed from **Not install** to **Install**.

Option Product			
Option List:			
Remote C.V.S.	[Not install]	▲	Install...
Remote LUN Configuration Manager 3	[Install]		De-install...
Remote D.C.R.	[Not install]		
Remote Cache LUN	[Install]		
Remote HMRCF	[Not install]		
Remote Business Copy	[Install]		
Remote LUN Configuration Manager 4	[Install]		
Remote Secure Manager	[Not install]		
Remote Auto LUN	[Not install]		
Remote ArchivalFunction	[Not install]		
Remote LDEV Security	[Not install]		
Remote Control Server	[Not install]	▼	Close[X]

8. Select Close to return to the RC main window.

Deinstalling Secure Manager

Deinstalling Secure Manager is the same for both the XP256 and XP512/XP48.
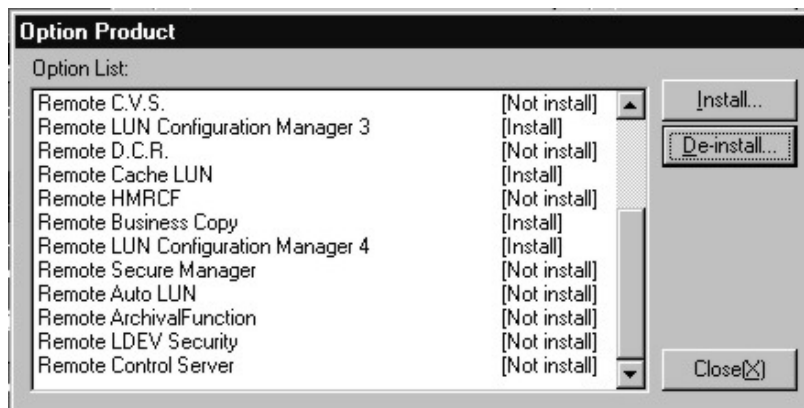
To deinstall Secure Manager:

1. Log in to Remote Control as administrator.

   The RC main window opens.

2. Select Option.

   The Option Product window opens, showing the current installation status of the optional software.

3. Select the Remote Secure Manager option from the option list.

4. Select the De-install button.

   The Option Product window changes the status of Remote Secure Manager from Install to Not Install. The Secure Manager option is now deinstalled.

5. Select Close to return to the RC main window.

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Operation

Secure Manager operations can be performed by users who have Administrator or modify privileges for Secure Manager. Users without these privileges can only view the security settings.

Finding the Worldwide Name

To enable security for a host, you must first determine the Worldwide Names (WWNs) of the host's adapter ports. The procedure for finding the WWN is different, depending on your operating system. Examples are given here for HP-UX, Windows NT, and Sun Solaris hosts.

Finding the WWN in an HP-UX environment (example)

Finding the WWN in an HP-UX environment requires that you have root access.

To find the WWN in an HP-UX environment:

1. Log in to HP-UX.

2. Enter **/usr/sbin/ioscan -fnC lan** to list the Fibre Channel devices and their device file names.

Example

```
# /usr/sbin/ioscan -fnC lan
Class     I   H/W Path  Driver     S/W State   H/W Type     Description
=======================================================================
lan       0   8/0.5      fcT1_cntl  CLAIMED     INTERFACE    HP Fibre Channel Mass Storage Cntl
                        /dev/fcms0
lan       4   8/4.5      fcT1_cntl  CLAIMED     INTERFACE    HP Fibre Channel Mass Storage Cntl
                        /dev/fcms4
lan       5   8/8.5      fcT1_cntl  CLAIMED     INTERFACE    HP Fibre Channel Mass Storage Cntl
                        /dev/fcms5
lan       6   8/12.5     fcT1_cntl  CLAIMED     INTERFACE    HP Fibre Channel Mass Storage Cntl
                        /dev/fcms6
lan       1   10/8/1/0   btlan4     CLAIMED     INTERFACE    PCI(10110009) -- Built-in #1
lan       2   10/8/2/0   btlan4     CLAIMED     INTERFACE    PCI(10110009) -- Built-in #2
lan       3   10/12/6    lan2       CLAIMED     INTERFACE    Built-in LAN
                        /dev/diag/lan3   /dev/ether3      /dev/lan3
```

3. Record the device file names, for example, **/dev/fcms0**.

4. Use the **fcmsutil** command and the Fibre Channel device name you recorded in step 3 to list the WWN for each Fibre Channel device.

   Example   To list the WWN for the device with the device file name **/dev/fcms0**, enter:

   /opt/fcms/bin/fcmsutil /dev/fcms0

```
# /opt/fcms/bin/fcmsutil /dev/fcms0
                 Local N_Port_ID is = 0x000001
       N_Port Node World Wide Name = 0x10000060B0C08294
       N_Port Port World Wide Name = 0x10000060B0C08294
                        Topology = IN_LOOP
                           Speed = 1062500000 (bps)
                     HPA of card = 0xFFB40000
                     EIM of card = 0xFFFA000D
                    Driver state = READY
           Number of EDB's in use = 0
           Number of OIB's in use = 0
 Number of Active Outbound Exchanges = 1
    Number of Active Login Sessions = 2
```

5. Record the WWN. Repeat step 4 for each Fibre Channel device name.

Finding the WWN in a Windows NT environment (example)

The disk array currently supports the Emulex Fibre Channel adapter in a Windows NT environment. The procedure for finding the WWN in a Windows NT environment is different depending on whether you have the Emulex port driver or the Emulex mini-port driver installed. Determine which driver you have installed and then follow the correct procedure.

To find the WWN in a Windows NT environment with a mini-port driver:

1. Log on to Windows NT with administrator access.

2. Open the LightPulse Utility.

3. Select an adapter.

4. In the Category pull-down menu, choose Configuration Data.

5. In the Region pull-down menu, choose "16 - World Wide Name".

   The WWN of the selected adapter is displayed in the list box on the right of the window under value.

6. Record the WWN.

7. Repeat steps 3 through 6 for each installed adapter.

To find the WWN in a Windows NT environment with a port driver:

1. Log on to Windows NT with administrator access.

2. Locate the DOS diagnostic tool **lp6dutil** on your disk drive.

   You may need to use the Find Files and Folders utility to locate the **lp6dutil.exe** file.

   If you cannot locate lp6dutil on your disk drive, download the utility from the Emulex web site (**www.emulex.com**).

3. Create a DOS boot disk and copy the file **lp6dutil.exe** to the disk.

4. Reboot the NT system with the newly created DOS boot disk in the diskette drive so the system boots from the DOS disk.

5. At the command line prompt enter **lp6dutil**.

   The diagnostic tool runs a preliminary test of the host adapters to confirm that the adapters are ready and functional.

6. Press Enter to continue.

   The lptdutil main menu opens.

7. Select option 6, "Show host adapter information".

   The Show Host Adapter Menu opens.

8. Select option 4, "Display Configuration Data".

   The Display Configuration Data Menu opens.

9. Choose the number of the node that you want the WWN for.

   For example, if there is an adapter installed on node A, select option 1, "Node Configuration A." If there is an adapter installed on node B, select option 2, "Node Configuration B", and so on.

   The node configuration option displays the parameters of the selected node. To obtain the WWN, combine N_Port Name[0] and N_Port Name[1].

Example   In the following example, the WWN is 10000000C92006C3.

```
Finished reading NV parameters for Host Adapter 1
N_Port Name[0] = 0x10000000       N_Port Name[1] = 0xC92006C3
Node Name[0] = 0x10000000         Node Name[1] = 0xC92006c3
Preferred DID = 0x00000000        Hard AL_PA = 0x0
                                  Option:
```

Finding the WWN in a Solaris environment (example)

The disk array supports the Jaycor Fibre Channel adapter in a Sun Solaris environment.

To find the WWN in a Sun Solaris environment:

1. Log on to Solaris with root access.

2. Enter the command **dmesg | grep Fibre** to list the installed Fibre Channel devices and their WWNs.

Example

```
# dmesg | grep Fibre
:
fcaw1: JNI Fibre Channel Adapter model FCW
fcaw1: Fibre Channel WWN: 200000e0694011a4
fcaw2: JNI Fibre Channel Adapter model FCW
fcaw2: Fibre Channel WWN: 200000e06940121e
#
```

3. Record the listed WWNs.

Starting Secure Manager

The Secure Manager main window allows you to:

- set and define LUN groups and WWN groups
- set ports to be secured
- set security for specified ports

To start Secure Manager:

1. On the Remote Control Option Select window, select LUN Management.

   The LUN Management window opens.

2. Under Mode, select Offline Mode in order to define Secure Manager parameters while I/O activity is suspended.

   Do not select Online Mode. It is not correct to define Secure Manager parameters while I/O activity continues.

   The View Mode option allows you to view the current LUN configuration without making LUN mapping or Secure Manager changes.
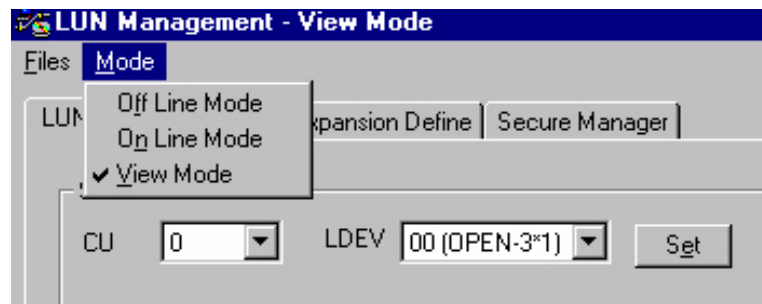
The LUN Management-Off Line Mode Configuration window opens.
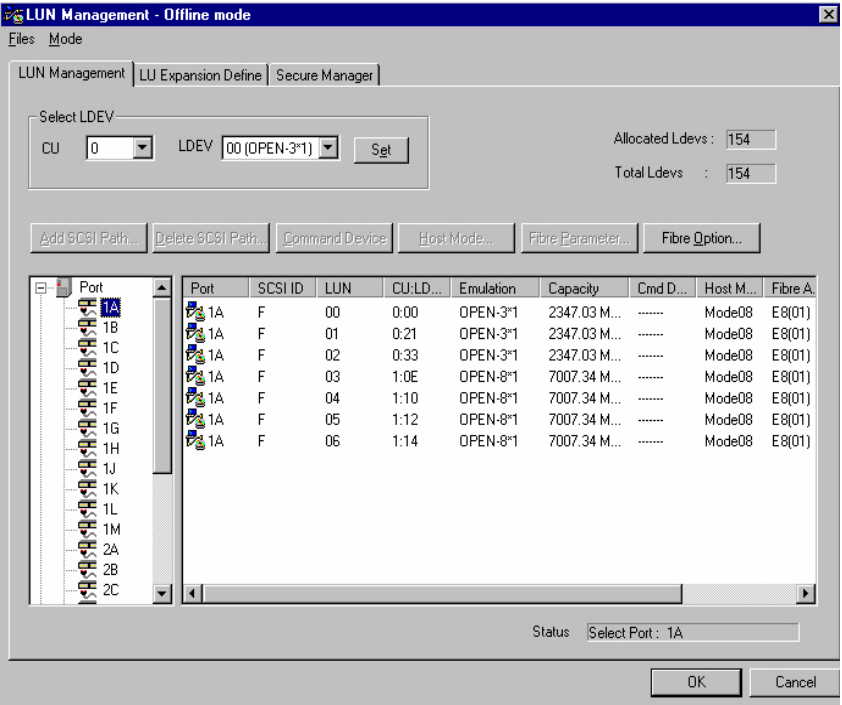
3. Select the Secure Manager tab.

The Secure Manager window opens.
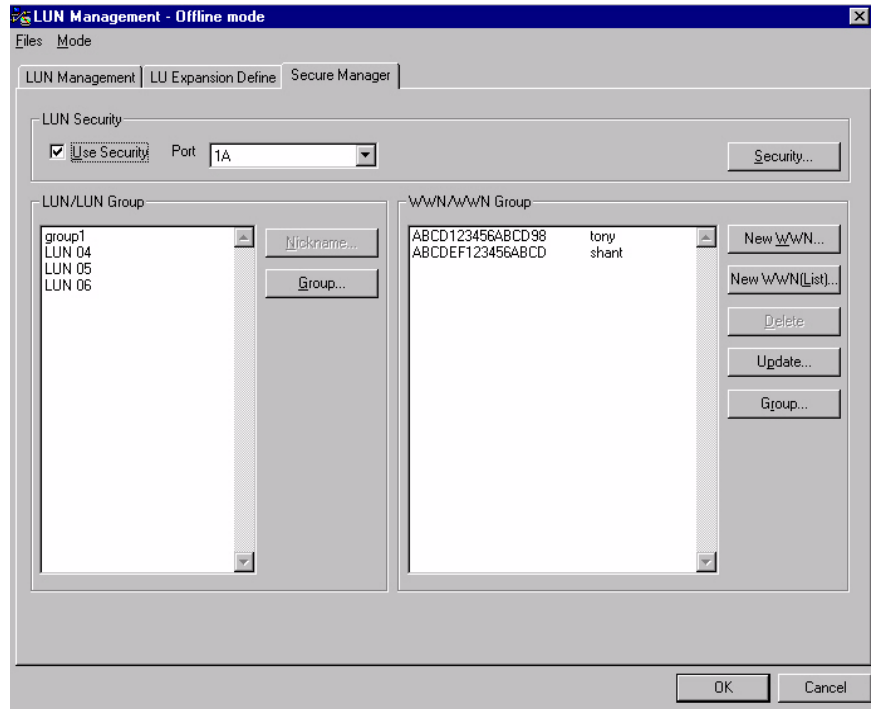
On the Secure Manager main window, the following functions are available:

LUN Security	Allows you to set LUN Security for a specified Fibre Channel port.
LUN/LUN Group	Displays the LUNs and LUN groups defined on the specified port.
Security	Allows you to set the security options for the LUNs listed in the LUN/LUN Group list box.
Nickname	Allows you to set or change the nickname of a LUN group.

Group		Allows you to define a LUN group name and set or change the LUNs assigned to a LUN group.
WWN/WWN Group		
		Displays the nicknames of defined WWNs.
New WWN		Allows you to define and set a WWN value and a WWN nickname.
New WWN List		Allows you to select a WWN value from the WWN list and register the WWN selected.
Delete		Allows you to delete a WWN from the WWN/WWN Group list box.
WWN		Allows you to change the security parameters of a WWN.
Group		Allows you to define a WWN group name and set or change the WWNs assigned to a WWN group.
OK		Completes the Secure Manager settings.
Cancel		Exits Secure Manager without making changes to the disk array.

Caution   *If you have defined LUNs or set LUN mapping options and you do not want to enable the Secure Manager, you must still select OK on the Secure Manager window. If you do not select OK, your changes will not be implemented.*

Defining Secure Manager parameters

Defining parameters

Defining Secure Manager parameters allows you to set the security access for a Fibre Channel port.

To define parameters:

1. On the Secure Manager main window, select the Fibre Channel port you want to secure from the Port pull-down list. Select the Use Security check box.
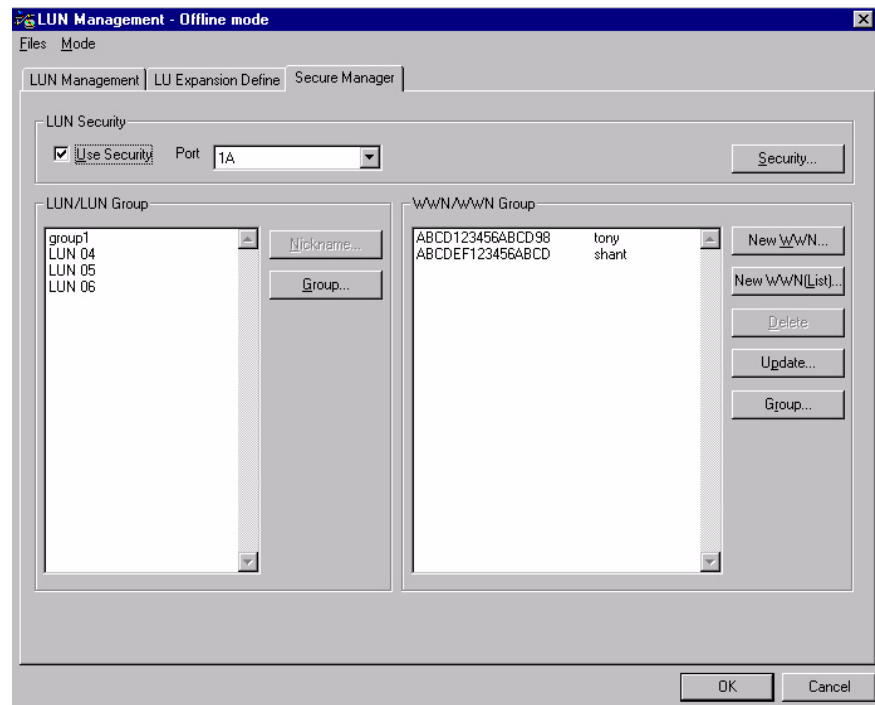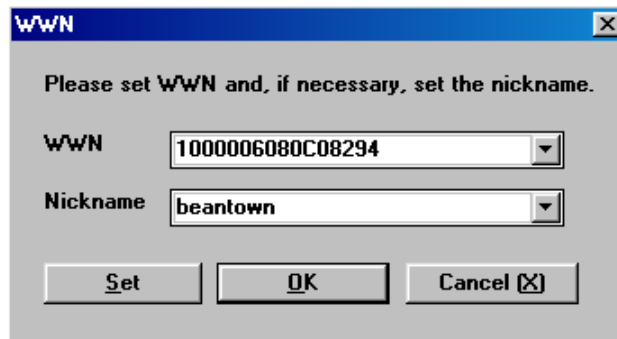
2. Verify that the LUNs for the specified port appear in the LUN/LUN Group list box.

   If the LUNs are not displayed, select Cancel to exit Secure Manager and define the LUNs using LUN Configuration Manager XP.

   If you want to create a LUN group, see "Creating a LUN group" (page 36).

3. Select New WWN.

   The WWN window opens.

4. Enter the host WWN in the WWN pull-down list box and enter the desired nickname in the Nickname pull-down list box.

   The nickname cannot exceed eight characters.

5. Select Set to register the information.

6. Repeat steps 4 and 5 until you have entered all the WWNs.

7. Select OK.

   The Secure Manager main window opens.

8. If you want to set a WWN group, go to "Creating a WWN group" (page 37).

9. After you have defined the WWNs and WWN or LUN groups, select Security.

   The Security window opens.
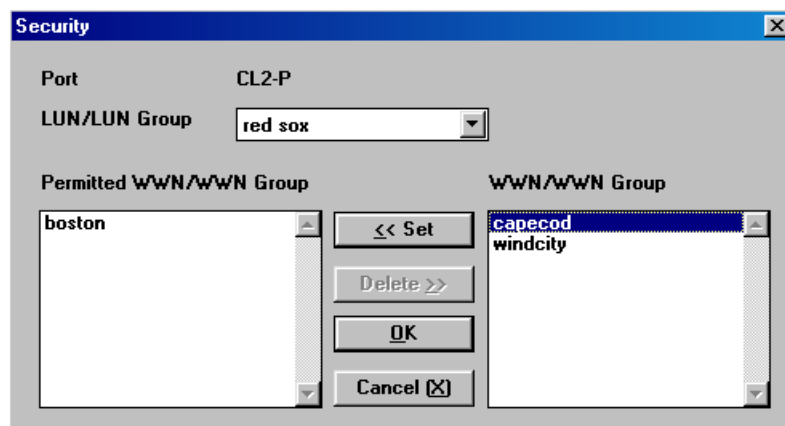
10. Select the LUN or LUN group you want to secure.

11. Select the WWN or WWN group you want to grant access to for the LUN or LUN group, and select Set.

    The newly assigned WWN or WWN group is displayed in the Permitted WWN/WWN Group list box.

12. Select OK to return to the Secure Manager window.

13. Repeat steps 1 through 12 for each Fibre Channel port you want to secure.

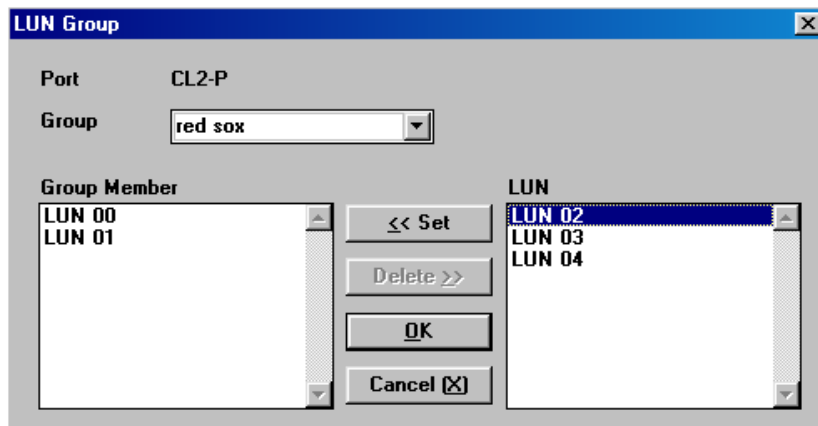14. When you have finished securing the desired ports, select OK to register the configuration changes with the disk array.

Creating a LUN group

Secure Manager allows you to assemble one or more LUNs into a group. You can manage access to all LUNs within a group using the LUN group name.

To create a LUN group:

1. On the Secure Manager main window, select the Group button in the LUN/LUN Group box.

   The LUN Group window opens.

Dialog box: LUN Group

Port: CL2-P
Group: red sox

Group Member
LUN 00
LUN 01

Buttons: << Set, Delete >>, OK, Cancel (X)

LUN
LUN 02
LUN 03
LUN 04

2. Define or select a group name in the Group pull-down list box.

3. In the LUN list box, select the LUNs you want to assign to the specified group, and select Set.

   The newly assigned LUNs are now displayed in the Group Member list box.

   If you make a mistake while selecting LUNs, select the unwanted LUN in the Group Member list box and select Delete to move the LUN out of the defined group. The newly unassigned LUN is displayed in the LUN list box.

4. After assigning the desired LUNs, select OK.

   The Secure Manager main window opens.

Creating a WWN group

A WWN group allows you to assign multiple WWNs to a single group. You can manage access to LUNs or LUN groups for all WWNs in the WWN group using a WWN group's name.

To create a WWN group:

1. Select Group in the WWN/WWN Group box.

   The WWN Group window opens.
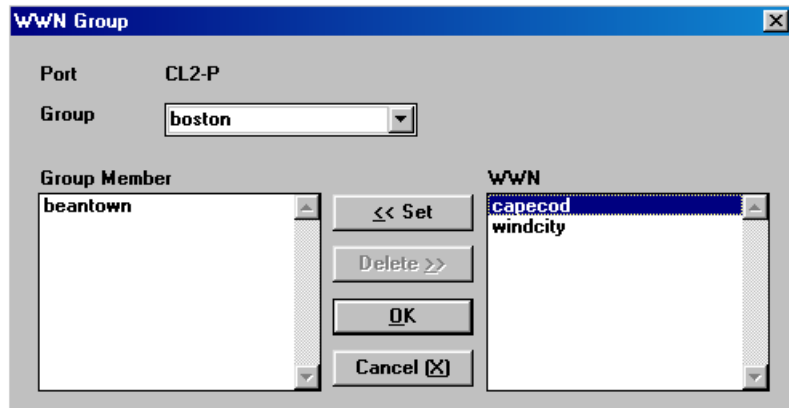
2. Enter a or select a group name in the Group pull-down list box.

3. Select the WWNs you want to assign to the specified group, and select Set.

   The newly assigned WWNs are now displayed in the Group Member list box.

   If you make a mistake while selecting WWNs, select the unwanted WWN in the Group Member list box and select Delete to move the WWN out of the defined group.

4. After assigning the desired WWNs, select OK.

   The Secure Manager main window opens.

Changing Secure Manager parameters

After you have set the Secure Manager parameters, you can change

- the LUN or WWN group assignments
- the WWN definition
- the LUN or WWN nickname

The Secure Manager main window allows you to delete WWNs and to secure LUNs or release LUNs from Secure Manager.

Releasing a port

The LUN Security window allows you to either set a port for Secure Manager management or release a port from Secure Manager management.

To release a port:

1. On the Secure Manager main window in the LUN Security box, select the desired port from the Port pull-down list.
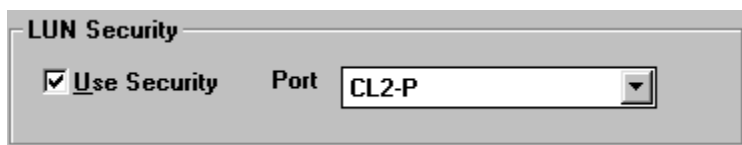
2. Deselect the Use Security check box.

   This will not erase the Secure Manager settings for LUNs on the selected port. The Secure Manager software will hold the assigned setting for a LUN until that LUN or its port is deinstalled or until the settings are manually erased from within the Secure Manager software.

Changing the WWN access to a LUN

You can change permissions for WWNs or WWN groups to access a LUN.

To change the WWN access to a LUN:

1. On the Secure Manager main window, select the desired port from the Port pull-down list box and then select Security to open the Security window.

2. Select the desired LUN or LUN Group from the LUN/LUN Group pull-down list box.

3. You can grant or deny WWNs or WWN groups permission to communicate with the selected LUN:

   To grant permission, select the WWNs or WWN groups you want to add to the permitted WWN/WWN Group list and select Set.

   To deny permission, select the WWNs or WWN groups you want to delete from the permitted WWN/WWN Group list and select Delete.

4. Select OK.

Changing LUN or LUN group parameters

You can change the security setting for defined LUNs on a specified port.

To change LUN or LUN group parameters:

1. In the LUN Security box on the Secure Manager main window, select the desired port from the Port pull-down list box.

2. Select Group from the LUN/LUN Group List box.

   The LUN Group window opens.

3. Select the desired group name from the Group pull-down list box.

4. You may add LUNs to or remove LUNs from a group.

   To add LUNs, select the LUNs you want to assign and select Set.

   To remove LUNs, select the LUNs you want to remove and select Delete.
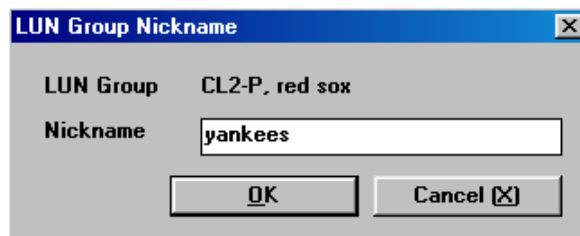
5. Select OK.

Changing a LUN group nickname

You can change the nickname of a LUN group.

To change a LUN group nickname:

1. On the Secure Manager main window, select the desired port from the Port pull-down list.

2. In the LUN/LUN Group list box, select the LUN group name you want to change. Select Nickname.
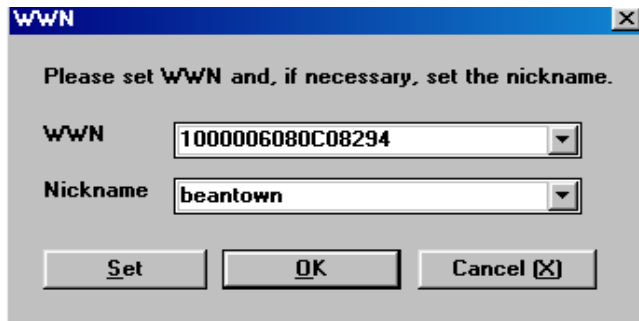
   The LUN Group Nickname window opens.

LUN Group Nickname	✕
LUN Group	CL2-P, red sox
Nickname	yankees
	OK **Cancel [X]**

3. Enter the new nickname for the LUN group, and select OK.

Adding a new WWN

You can add a new WWN as needed.

To add a new WWN:

1. In the LUN Security box on the Secure Manager main window, select the desired port from the Port pull-down list.

2. In the WWN/WWN Group box, select New WWN.

WWN

Please set WWN and, if necessary, set the nickname.

WWN   `1000006080C08294`

Nickname   `beantown`

| Set | OK | Cancel (X) |

3. Enter the WWN in the WWN pull-down box and enter the desired nickname in the Nickname pull-down list box.

   The nickname cannot exceed eight characters.

4. Select Set.

5. Select OK.

Deleting a WWN

You can delete a WWN as needed.

To delete a WWN:

1. In the LUN Security box on the Secure Manager main window, select the desired port from the Port pull-down list.

2. In the WWN/WWN Group list box, select the unwanted WWN and select Delete.

   A confirmation window opens.

LUN Security

⚠ [SEC2787i]

Are you sure you want to delete the selected WWN?
If you select [Yes], LUN security information of the WWN will be deleted too.

| Yes | No |
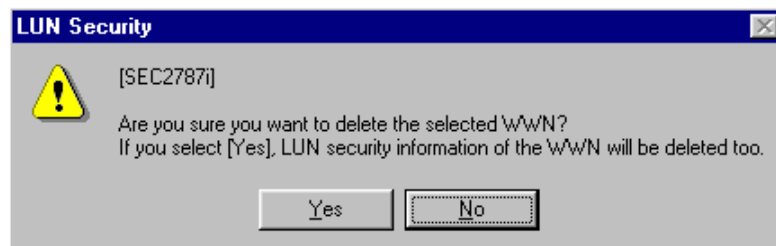
3. Select Yes to delete the name or No to exit without deleting the name.

Changing WWN nicknames

You can change Worldwide Name nicknames from the Update WWN/WWN Group window.

To change a WWN nickname:

1. In the LUN Security box on the Secure Manager main window, select the desired port from the Port pull-down list.

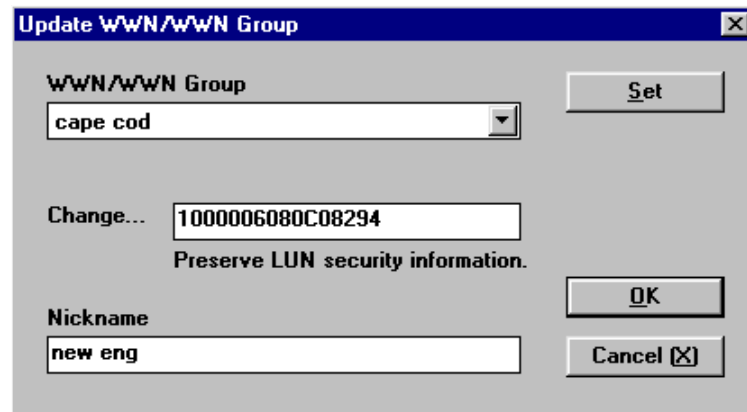2. Select WWN to open the Update WWN/WWN Group window.
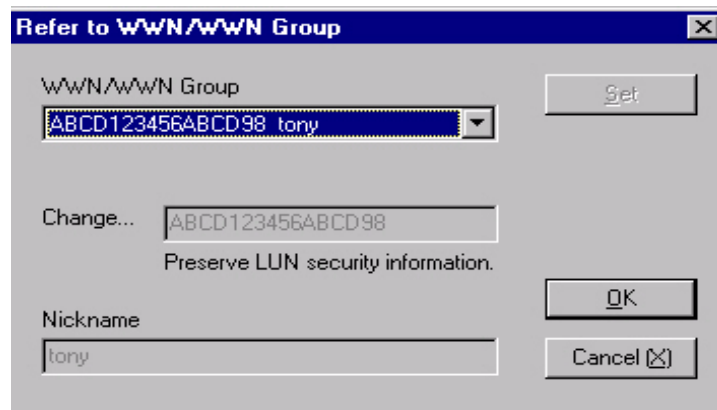
3. Select the nickname for the WWN or WWN Group you want to change from the WWN/WWN Group pull-down list.

4. In the Nickname field box, enter the desired nickname and select Set.

   A confirmation window opens and asks if you want to change the WWN nickname.

5. Select Yes.

6. When you have finished making the desired changes to the WWN parameters, select OK.

Changing WWNs

You can change Worldwide Names from the Update WWN/WWN Group window.

To change a WWN:

1. In the LUN Security box on the Secure Manager main window, select the desired port from the Port pull-down list.

2. Select WWN to open the Update WWN/WWN Group window.

3. Select the nickname for the WWN you want to change from the WWN/WWN Group pull-down list.

4. In the Change field box, enter the new WWN and select Set.

   A confirmation window box opens and asks if you want to change the WWN.

5. Select Yes.

6. When you have finished making the desired changes to the WWN parameters, select OK.

Changing WWN group definitions

You can change WWN group definitions by adding WWNs to or deleting WWNs from the group.

To change WWN group definitions:

1. In the LUN Security box on the Secure Manager main window, select the desired port from the Port pull-down list.

2. Select the Group button in the WWN/WWN Group List box.

   The WWN Group window opens.
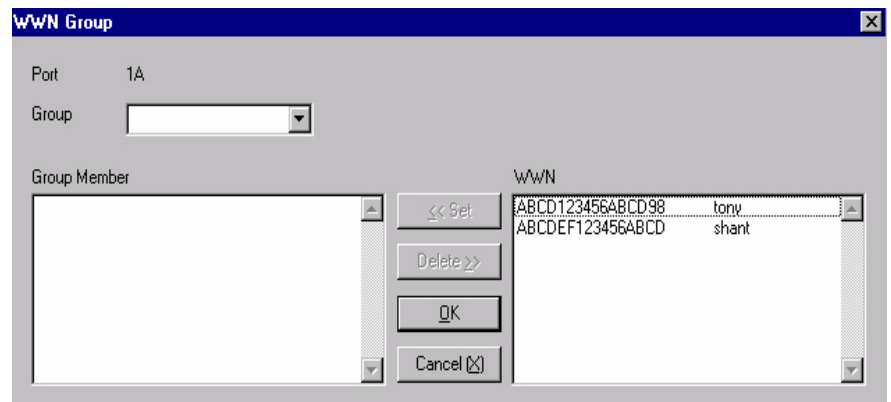
3. Select the WWN group that you want to change.

4. To add a WWN to the selected group, select the WWNs you want to assign to the specified group and select Set.

5. To delete a WWN from the selected group, select the WWNs you want to delete from the specified group and select Delete.

6. Select OK.

Accessing the WWN List window

To access the WWN List window:

1. On the LUN security Main window, select the desired port from the Port list box in the LUN Security box.

2. Select the Use Security box.

3. In the WWN/WWN Group box select the New WWN(List) button to open the WWN List window.

The WWN List window has the following features:

- The Selected Port box displays the port selected on the LUN security Main window. You can register WWNs for this port from the WWN list window.

- The Source box allows you to select an option for displaying WWNs:

  DKC displays a list of WWNs identified by the array. If the array cannot identify the WWNs, the information from the hard disk drive of the remote console PC is used to display a list of WWNs.

  HHD displays a list of WWNs obtained from the configuration information on the hard disk drive of the remote console PC.

- The Filter box allows you to filter WWNs of the selected port(s) in the WWN list.

  The Port selection box allows you to select port(s) whose WWNs are to be filtered. You can either select All to filter WWNs of all equipped devices, or select the desired port to filter WWNs of that port.

  The WWN text box allows you to enter a WWN (up to 16 characters). You can also use a wildcard ("*").

  Note: Entering 1111***0000 is the same as entering 1111****0000****. If you omit a WWN, **************** is assumed, and no filtering by WWN takes place.

  The Nickname text box allows you to enter a nickname (up to 8 characters). You can also use a wildcard ("*").

  Note: Entering wwn**1 is the same as entering wwn**1**. If you omit the nickname, ******** is assumed, and no filtering by nickname takes place.

- The Show button starts filtering the WWNs as specified in the Filter Box.

- The Reset button resets the settings in the Filter box to the default.

- The WWN list box displays the port, WWN, and the nickname of the filtered WWNs. You can select more than one WWN to be registered.

- The Set button registers the selected WWNs to the selected port (in SelectedPort). The set button is available only when you select one or more WWNs in the WWN list box.

- The OK button applies the setting and returns you to the LUN Security Main window.

- The Cancel button returns you to the LUN Security Main window without applying the settings

- The box below the WWN list displays the number of WWNs displayed in the WWN list.

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Troubleshooting

Your can perform troubleshooting or get assistance from an HP service representative, depending on your HP service contract. If you are unable to resolve an error condition, ask your HP service representative for assistance.

If you need to call HP customer support, make sure to provide as much information about the problem as possible, including the circumstances surrounding the error or failure and the exact content of any error messages displayed on the host system. Use Remote Control to check the R-SIM window and note the reference codes and severity levels of recent R-SIMs.

Glossary

AL	Arbitrated loop.
BC	The HP StorageWorks Business Copy XP software program. BC lets you maintain up to nine internal copies of logical volumes on the disk array.
CA	The HP StorageWorks Continuous Access XP software program. CA lets you create and maintain duplicate copies of local logical volumes on a remote disk array.
DKC **(disk controller unit)**	The array cabinet that houses the channel adapters and service processor (SVP).
DKU **(disk cabinet unit)**	The array cabinets that house the physical disks.
emulation modes	The logical devices (LDEVs) in each RAID group can have one of the following emulation modes. The emulation mode determines the capacity of the LDEV.

OPEN-3:   2.29 GB
OPEN-8:   6.84 GB
OPEN-9:   6.88 GB
OPEN-E: 13.56 GB
OPEN-K: 1.74 GB
OPEN-L: 33.94 GB
OPEN-M: 43.94 GB

FC	Fibre Channel.
FC-AL	Fibre Channel arbitrated loop.
FCP	Fibre Channel Protocol.

HBA	Host bus adapter.
HP	Hewlett-Packard Company.
LDEV	Logical device. An LDEV is created when a RAID group is divided into sections using a selected host emulation mode (for example, OPEN-9 or OPEN-M). The number of resulting LDEVs depends on the emulation mode. The term LDEV is often used synonymously with the term volume.
LU	Logical unit.
LUN	Logical unit number. A LUN results from mapping a SCSI logical unit number, port ID, and LDEV ID to a RAID group. The size of the LUN is determined by the emulation mode of the LDEV, and the number of LDEVs associated with the LUN. For example, a LUN associated with two OPEN-3 LDEVs will have a size of 4,693 MB.
LUSE	Logical Unit Size Expansion, a feature which logically combines LDEVs so they appear as a larger LDEV. This allows a LUN to be associated with 2 to 36 LDEVs. Essentially, LUSE makes it possible for applications to access data requiring a large amount of disk space.
MB	Megabytes.
MPE	Maximum physical extent.
nickname	A name meaningful to the user that may be assigned to a LUN group using the LUN Group Nickname window, which is accessed from the Secure Manager main window.
OFC	Open Fibre Control.
OPEN-*x*	A general term describing any one of the supported OPEN emulation modes (for example, OPEN-3, OPEN-9, OPEN-L, etc.).
OS	Operating system.
PA	Physical address.
path	"Path" and "LUN" are synonymous. Paths are created by associating a port, a target, and a LUN ID with one or more LDEVs.
PC	Personal computer.

PE	Physical extent.
port	The number of ports on an XP disk array depends on the number of supported I/O slots and the number of ports available per I/O adapter. The XP family of disk arrays supports Fibre Channel, ESCON, and SCSI ports. *I/O support may vary with the selected disk array.*
	Ports are named based upon their port group and port letter. Examples of port names include CL1-A through CL1-R and CL2-A through CL2-R (letters I and O are skipped).
P-P	Point-to-point.
RAID	Redundant array of independent disks.
remote console PC	The PC running HP StorageWorks Remote Control XP.
Remote Control (RC)	HP StorageWorks Remote Control XP. A software product used for managing XP arrays.
R-SIM	Remote service information message.
SCSI	Small computer system interface.
SIM	Service information message.
SMS	System managed storage.
SNMP	Simple Network Management Protocol.
SVP	Service processor. A laptop PC built into the disk array. The SVP provides a direct interface into the disk array, and is used by the HP service representative only.
TB	Terabytes.
TID	Target ID.
VSC	Volume Size Configuration.
WWN	Worldwide Name. A unique identifier for an open system host consisting of a 64-bit physical address that uses the IEEE 48-bit format with a 12-bit extension and a 4-bit prefix.

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